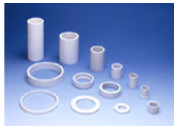




HENZE Boron Nitride in the extrusion industry



HENZE Boron Nitride Products GmbH is dedicated exclusively to hexagonal boron nitride. In our Kempten/Germany based plant we manufacture high precision parts by machining sintered boron nitride ceramics exactly to our customers' needs. In addition also suspensions and sprays are being developed and made from boron nitride powder.



Hexagonal boron nitride (hBN) ...

- resists high temperatures (up to 900 °C under oxidizing conditions)
- withstands numerous chemical agents
- is not wetted by liquid aluminum and most other molten metals
- has a very low coefficient of friction
- maintains its outstanding lubricity within a wide temperature range
- is both an excellent electrical insulator and heat conductor
- is neither toxic nor harmful to the environment
- is white



Owing to this none too common combination of properties, hBN has become virtually indispensable in the aluminum industry, especially in the extrusion process. We have developed a whole range of boron nitride specialties for this sector:

- HeBoFill® boron nitride powders
- HeBoCoat® boron nitride suspensions
- HeBoCoat® boron nitride sprays

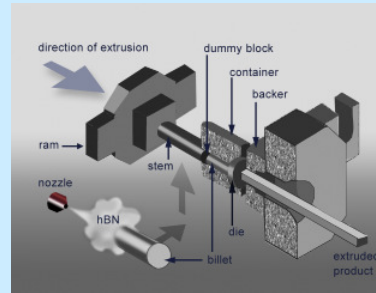


These products are being used as release and lubricating agents for high temperature applications. Their lubricity, essentially, is due to the microcrystalline structure of hBN, which – similar to that of graphite – is made up of tiny hexagonal platelets. For this reason, and for its characteristic white color, hBN is also known as “white graphite”.



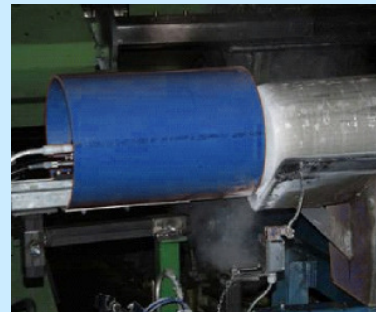
HeBoFill® powders in the extrusion process

- HeBoFill® powders are deposited by means of electrostatic spraying devices on the hot aluminum billet in order to prevent it from sticking to the dummy block.
- HeBoFill® has widely replaced the soot applied by acetylene torches, doing away with the risks of open flames.
- HeBoFill®, in addition, contributes to the reduction of maintenance costs since, as an electrical insulator, it will not cause short circuits in electrical installations as may occur with soot or graphite.
- HeBoFill® does not produce black spots on the extruded profiles.
- HeBoFill® is a truly economical solution, since quantities to be applied are minimal – just some 0.3 to 0.5 g per shot!



The schematic drawing at left shows a press in which the billet is fed laterally. Before entering the press the billet is stopped briefly so that the face which will touch the dummy block can be sprayed with boron nitride.

The spray gun may be placed within a plastic tube as shown in the photograph below (blue color). Owing to its equal electrostatic charge the tube “focuses” the powder cloud. Consequently a denser hBN layer is formed on the billet face and less material goes to waste.



When, during degassing, the stem moves back, part of the hBN will cling to the dummy block. Consequently its perimeter will receive some lubrication. This reduces friction and wear on the rim, prolonging the life of the dummy block.

(continued →)

HeBoFill® in the extrusion process (contd.)

However in front-loaded presses some extra lubricant has to be applied to the rim. This is usually still done by hand, but we are cooperating with renowned manufacturers of spraying equipment to develop mechanical solutions.

Last but not least: **HeBoFill®** powders can also be applied to the sealing of the container to avoid the formation of “mushrooms”.

HeBoCoat® suspensions in the extrusion process



HeBoCoat® suspensions are water based preparations of hexagonal boron nitride which are used as release agents for the discard shear. They are sprayed onto the shear blade and will prevent the discard from sticking to it.

HeBoCoat® suspensions provide excellent lubrication and allow clean cuts and even surfaces. They will not leave any residues on the profiles as may happen with oil, grease or wax.

With HeBoCoat® there are fewer air inclusions and blisters. This will not only reduce dead times but also improve productivity and safety.

HeBoCoat® aerosols in the die shop



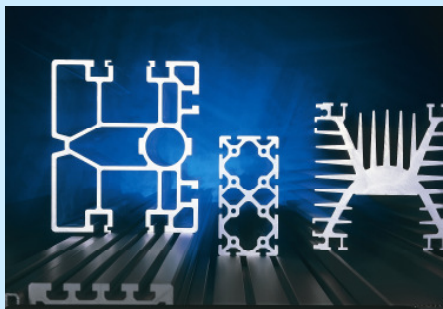
HeBoCoat® aerosols are solvent-based preparations of boron nitride that come in easy-to-use 400 ml spray cans (see photograph at left).

HeBoCoat® is applied onto the clean bearings of new or recently corrected dies to improve the material flow during the first pressing cycle. HeBoCoat®, unlike graphite, will leave no marks on the extruded profile.



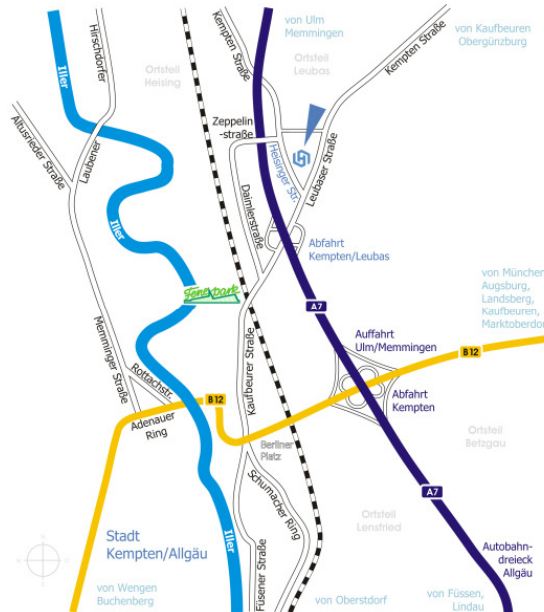
HENZE Boron Nitride Products ...

- are excellent release and lubricating agents
- can be used on the billet face, dummy block, container seal, discard shear and in the die shop
- will prevent hot aluminum from sticking to metal surfaces
- have widely replaced soot, oils, greases and wax
- do away with open acetylene flames and the corresponding risks
- will not cause short circuits in electrical equipment as may happen with soot and graphite
- improve cleanliness around the presses
- are easily applied by electrostatic guns (powder) or spraying (suspensions/aerosols)
- can be used economically thanks to the very small quantities applied per shot
- will contribute to less dead time and more productivity
- are neither toxic nor harmful to the environment



Better solutions with HENZE Boron Nitride Products

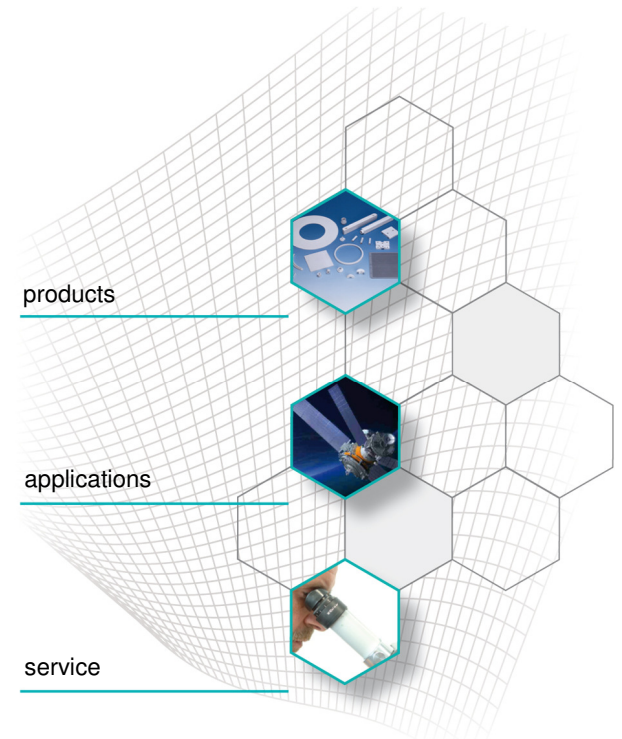
If you need support related to lubrication or release in your extrusion process, please feel free to contact us by phone or e-mail. Our technical experts will gladly try to come up with a solution. You are also welcome to visit our Kempten plant. The ancient town of Kempten is located in the beautiful Allgäu region in Southern Germany. Just take the "Autobahn" A 7, and leave it at the exit "Kempten-Leubas".



HENZE
Boron Nitride Products GmbH
Heisinger Str. 12
D-87437 Kempten / Allgäu
Germany

Phone: ++49 (0) 831.54 07 4-0
Fax: ++49 (0) 831.54 07 4-29
mailto: info@henze-bnp.de
website: <http://www.henze-bnp.de>

Technical Information Aluminum Extrusion



HENZE Boron Nitride Products
Your Competitive Edge